

Appendix A
CEQA Checklist Signature Page

The environmental factors checked below would be potentially affected by the proposed project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|---|---|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards and Hazardous Materials | <input checked="" type="checkbox"/> Hydrology/Water Quality |
| <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise |
| <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Utilities/Service Systems | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION: (To be completed by the lead agency)

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the proposed project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MIGHT have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MIGHT have a "Potentially Significant Impact" or "Potentially Significant Unless Mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (1) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (2) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed on the proposed project, nothing further is required.

Stan Wangberg, General Manager

Date

Signature

Date

Appendix B

Biological Site Assessment

Biological Site Assessment for Groundwater Production Wells No. 1 and 2, Anderson-Cottonwood Irrigation District

PREPARED FOR: Anderson-Cottonwood Irrigation District
PREPARED BY: Victor Leighton/SAC
DATE: April 14, 2011

Introduction

This technical memorandum identifies potential biological constraints/issues associated with ground-disturbing activities related to the proposed construction of Groundwater Production Wells No. 1 and 2, part of Anderson-Cottonwood Irrigation District's (ACID) Integrated Regional Water Management Program Proposition 50 Groundwater Well Production Element Project (proposed project). This information is based on a preliminary site assessment conducted on February 15, 2011, and review of aerial photographs; California Department of Fish and Game California Natural Diversity Database (CNDDB) search results; CNDDB, California Native Plant Society (CNPS), and U.S. Fish and Wildlife (USFWS) species lists; and historical documents for the area.

Information from these sources would be used in the planning and design phase of the proposed project. The site assessment was conducted to determine the occurrence of native habitats, including vernal pools, wetlands, and riparian habitat, and special-status species at the proposed well sites.

Project Summary

ACID proposes to install two new groundwater production wells near its main canal. Figure 1 shows the general location of the proposed wells.

ACID Well No. 1 would be in Anderson in Shasta County, California (Township 30 North, Range 04 West, Section 23; Mount Diablo Meridian; 122° 17' 19.15" West longitude, 40° 26' 19.34" North latitude [North American Datum of 1983] in the U.S. Geological Survey [USGS] Cottonwood 7.5-minute quadrangle). The well would be north of Deschutes Road, as shown on Figure 2.

ACID Well No. 2 would be approximately 0.5 mile northwest of Cottonwood in Shasta County, California (Township 29 North, Range 04 West, Section 2; Mount Diablo Meridian; 122° 17' 30.03" West longitude, 40° 23' 39.08" North latitude [North American Datum of 1983] in USGS Cottonwood 7.5-minute quadrangle). The well would be north of Gas Point Road and west of Rhonda Road, as shown on Figure 3.

Each well would have a target capacity of 3,500 gallons per minute (gpm) and would require a 100- to 150-horsepower pump motor. The wells would operate 24 hours per day under the following schedule:

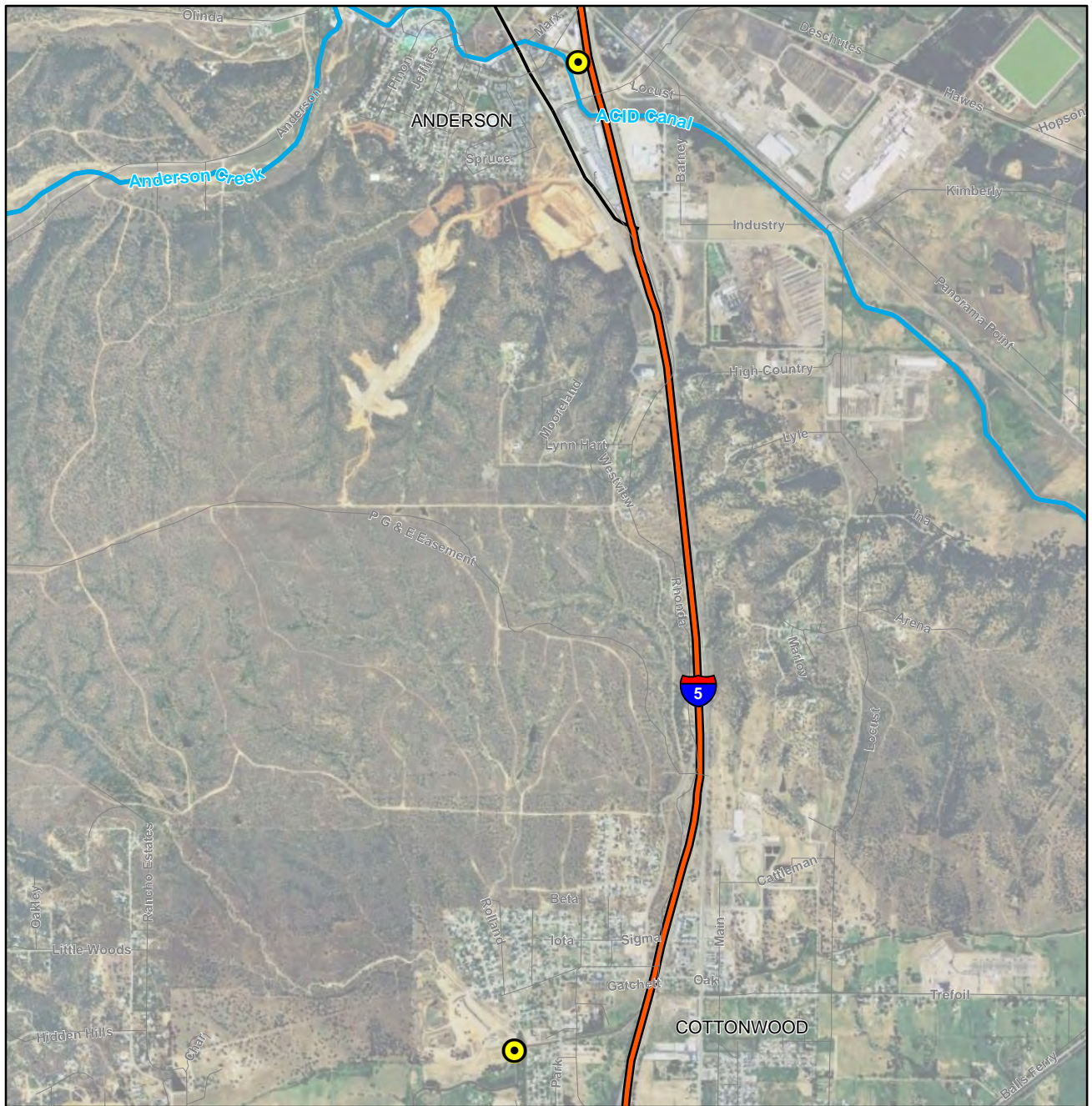
- Noncritical water years: Proposed Well No. 1 would operate in critical dry years and would not operate in normal years. Proposed Well No. 2 would operate annually from June through October to augment water supply in an area where water conveyance is seasonally limited by aquatic vegetative growth in the canal (aquatic vegetation increases in growth throughout the delivery season, which decreases canal capacity).
- Critical water years: Both wells would operate annually from April through October during periods of curtailment to augment water supply.

Construction Activities

Each well would require a 100-foot by 200-foot construction staging area. The final footprint of each well would not exceed 25 feet by 25 feet, with an estimated well depth of 500 feet. Conveyance piping would be required for each pump. A maximum of 100 feet of conveyance piping, 12 to 14 inches in diameter, would be installed approximately 12 to 24 inches underground at each well. The pipelines would discharge directly into the ACID main canal via open-ended discharge through the canal bank. The wells would be powered by electricity and could require a maximum 1,000 feet of overhead service line and one new power pole (approximately 12 inches in diameter) installed within 50 feet of each new well. Figures 1 and 2 identify existing power poles from which electricity would take off. The method of construction for the conveyance pipeline would be open trench. Existing roads would allow access to both wells, and would not require improvements. Final project design and construction are expected in fall 2011. Drill cuttings and fluids would be disposed of onsite at a location previously agreed upon by the property owner.

The following equipment is expected to be required for each proposed well installation:

- Self-propelled or trailer-mounted reverse circulation drilling rig (2 weeks)
- Pipe trailer (2 weeks)
- Support trailer/doghouse (2 weeks)
- Backhoe (6 weeks)
- Fluid containment tanks (4 weeks)
- Cement delivery trucks (4 days)
- Geophysical logging van (2 days)
- Pump setting rig (2 days)
- Up to three crew-member vehicles (6 weeks)
- Fuel delivery vehicles (4 days)



- LEGEND**
- PROPOSED PRODUCTION WELL
 - LOCAL ROAD
 - STATE HIGHWAY 273
 - WATER FLOW

VICINITY MAP

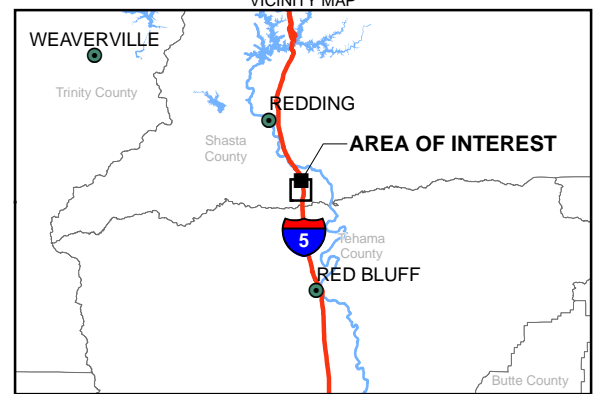


FIGURE 1
ACID PROPOSED WELL LOCATIONS
 ACID GROUNDWATER PRODUCTION ELEMENT PROJECT



LEGEND

- PRODUCTION WELL
- EXISTING POWER POLE
- PROPOSED POWER POLE
- ACCESS ROUTE
- PROPOSED CONVEYANCE LINE TO CANAL
- PROPOSED POWER LINE
- PROJECT AREA

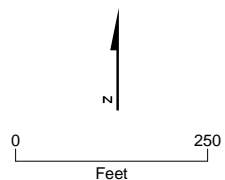
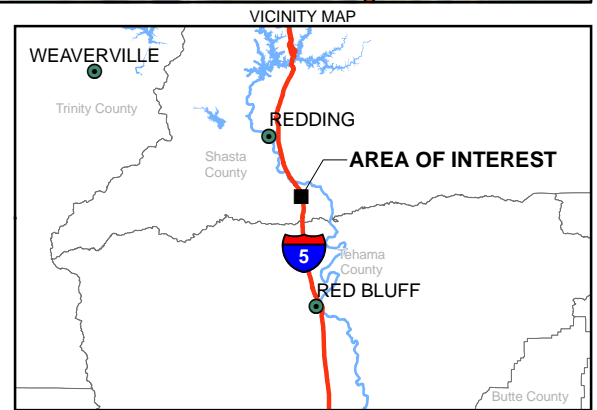
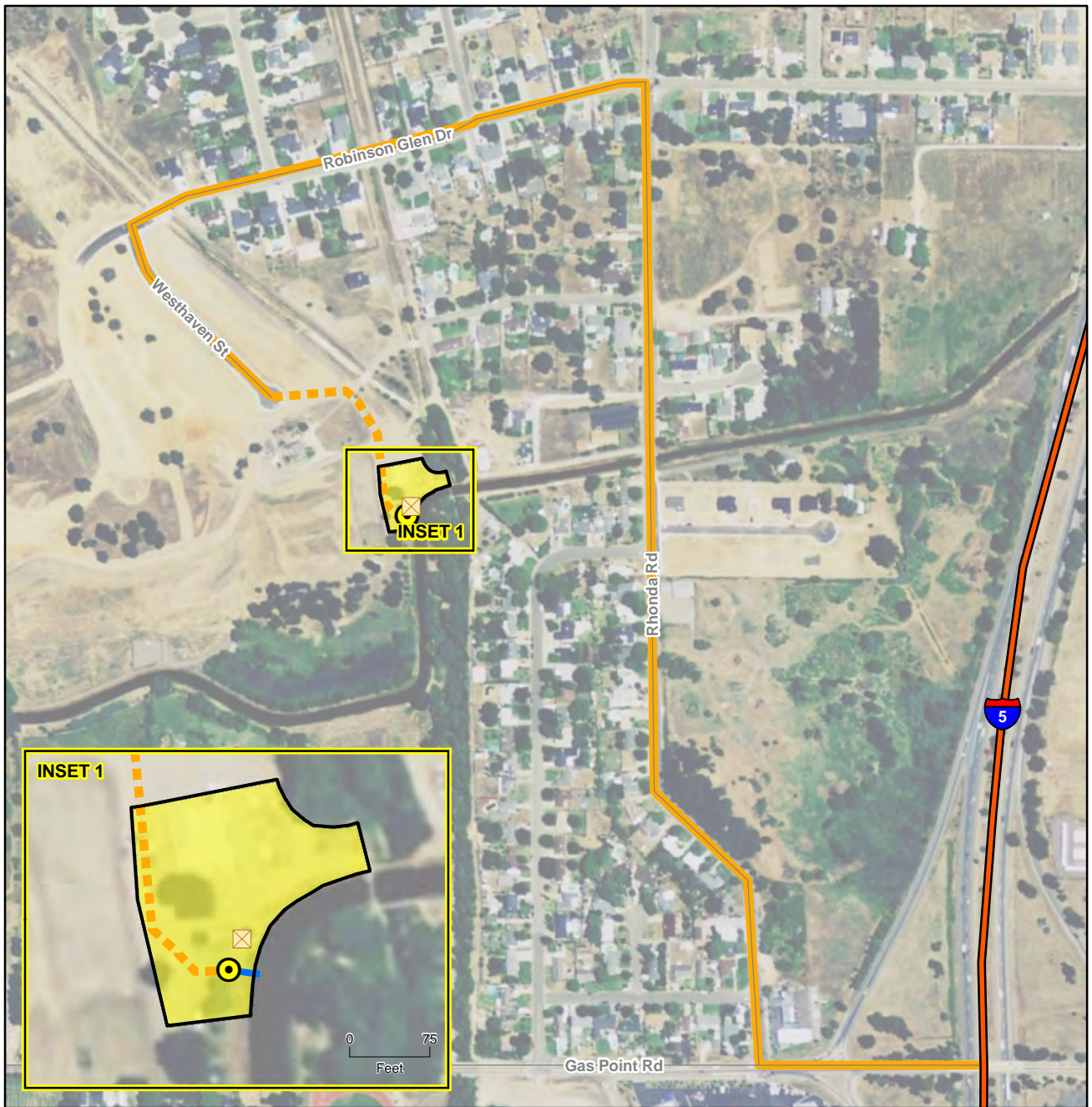


FIGURE 2
ACID GROUNDWATER PRODUCTION
WELL No. 1 LOCATION MAP

ACID GROUNDWATER PRODUCTION ELEMENT PROJECT

CH2MHILL



LEGEND

- PRODUCTION WELL
- EXISTING POWER POLE
- ACCESS ROUTE
- PRIVATE ACCESS ROAD
- PROPOSED CONVEYANCE LINE TO CANAL
- PROJECT AREA

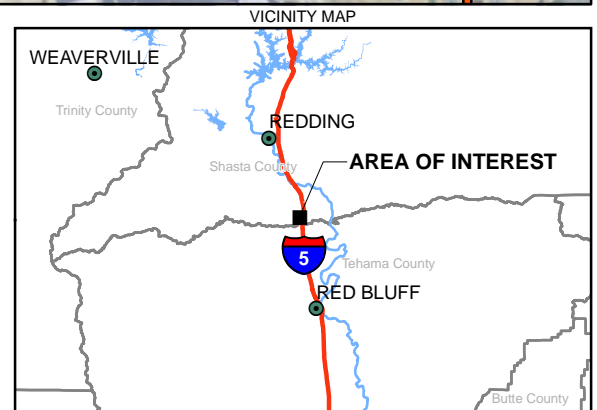
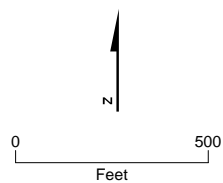


FIGURE 3
ACID GROUNDWATER PRODUCTION
WELL No. 2 LOCATION MAP
 ACID GROUNDWATER PRODUCTION ELEMENT PROJECT

Construction Schedule

Installation of the 500-foot-deep wells would require approximately 30 working days, with ten 24-hour shifts during weekdays and weekends. The remaining 20 working days would require 10- to 12-hour shifts. Personnel requirements for the first 10 days of well installation would include two crews, each consisting of one rig operator and two laborers. One construction superintendant would oversee both crews. Personnel for well development and testing would require one operator, two laborers, and one construction superintendant working a maximum 12-hour shift per day (that is, one shift).

In addition to manufacturer representatives, engineering construction management and contractor personnel would be required onsite for installation of conveyance piping. Construction of aboveground facilities, including the conveyance pipeline, would take up to 10 working days and would require two operators, two laborers, and one construction superintendant. Total personnel for each well installation would not likely exceed 12 people on any given day. On an average day, five people would be onsite.

Survey Methods

The site survey was conducted on February 15, 2011, between 11:00 a.m. and 1:00 p.m. Air temperatures were between 37 and 40 degrees Fahrenheit, with overcast skies, intermittent rain and hail, and negligible wind speeds. The site was systematically evaluated on foot throughout the project area to identify biological resources and environmental constraints. Photographs taken during the site survey are provided in Attachment B1. The CNDDDB search results (Figures 4 and 5) and the CNDDDB, USFWS, and CNPS species lists are provided in Attachment B2.

Results

Flora

Well No. 1. Annual ruderal, routinely disturbed grassland habitat occurs throughout the project area and along the ACID main canal. Within the project area, vegetation appears to be routinely disturbed by ACID activities (e.g., dirt/rock and stockpile movement, equipment usage, and mowing). Much of the site is a stockpile of rock, dirt, and other construction debris generated by ACID projects in the region. The ruderal vegetation is characterized by non-native annual vegetation such as ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), rat-tail fescue (*Vulpia myuros*), storksbill (*Erodium botrys*), and yellow star-thistle (*Centaurea solstitialis*). A large valley oak (*Quercus lobata*) is in the northeast corner of the project area. Attachment B3 (Table B3-1) lists the plant species observed within the project area.

Well No. 2. Annual ruderal grassland habitat occurs throughout the project area and along the ACID main canal. Within much of the project area, vegetation is routinely sprayed or mowed. The ruderal grassland community is characterized by non-native annual vegetation such as ripgut brome, soft chess, rat-tail fescue, and yellow star-thistle. Interior live oaks (*Quercus wislizenii*) are scattered throughout the southern portion of the property. Vegetation associated with the residential properties consists of horticultural plants such as pines (*Pinus* spp.) and American privet (*Ligustrum* sp.). East of the project site is dominated by riparian vegetation along Crowley Gulch and is characterized by Fremont cottonwoods

(*Populus fremontii*) and Gooding's willow (*Salix goodingii*) in the overstory with an understory dominated by Himalayan blackberry (*Rubus discolor*) and scattered arroyo willow (*Salix lasiolepis*). Attachment B3 (Table B3-1) lists the plant species observed within the project area.

Sensitive Habitats

Well No. 1. No sensitive habitats were identified within the Well No. 1 project area or adjacent areas that would be affected by the proposed work.

Well No. 2. The following sensitive habitats were observed at Well No. 2.

Waters of the U.S.

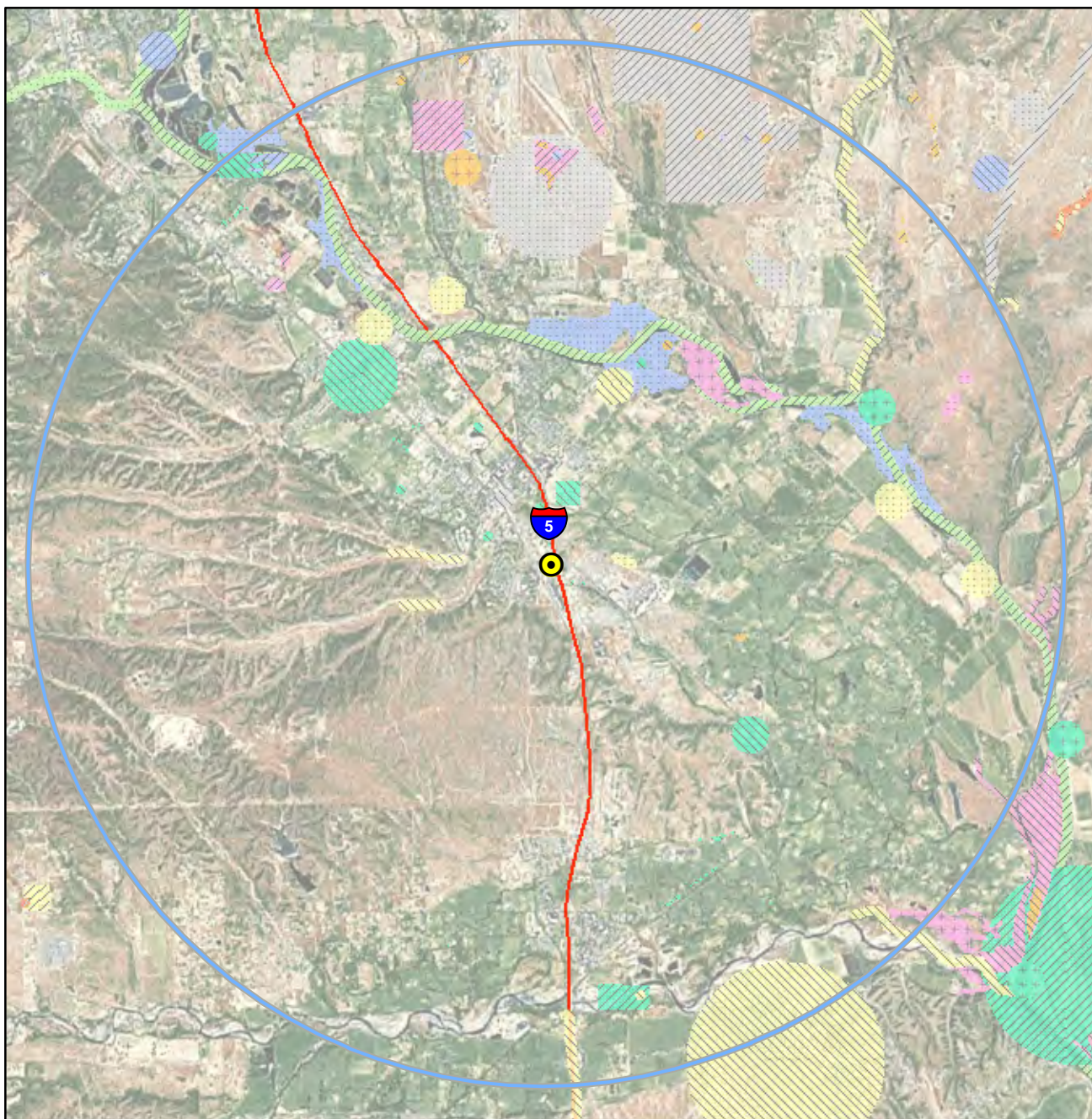
Crowley Gulch is mapped as an intermittent water feature on the USGS Cottonwood 7.5-minute quadrangle. The gulch is on the eastern edge of the study area and has a well-defined channel with steep banks. Large Fremont cottonwoods and dense Himalayan blackberry intermixed with small arroyo and Gooding's willows occur along the banks (see Attachment B1). The substrate of the gulch contains a large amount of organic debris consisting of wood and coarse plant material. Under the organic material and exposed in various locations, the stream has an inorganic substrate of cobble (2.5 to 10 inches) and gravel (0.1 to 2.5 inches). Because of temporal and spatial variability of rainfall in the Cottonwood area, Crowley Gulch is considered an arid ephemeral stream, flowing only during storm events and remaining dry for most of the year. Because of seepage from the flashboards at the ACID weir bays during the water delivery season (April through October), atypical water conditions appear upstream of the weir and for an undefined distance downstream. These conditions support heavy growth of facultative wetland to obligate vegetation species (Reed, 1988) within the channel bed, including a small patch of cattails (*Typha latifolia*). The bed and banks within the Crowley Gulch have been cleared of vegetation approximately 60 feet upstream and 120 feet downstream (see Attachment B1). Crowley Gulch flows south to Cottonwood Creek, approximately 1.25 river-miles south of the project area.

Cottonwood-Willow Riparian Forest

Riparian vegetation along Crowley Gulch is characterized by large mature cottonwoods and Gooding's willow in the overstory with an understory dominated by Himalayan blackberry and scattered arroyo willow as shown in Attachment B1.

Oak Woodlands and Other Native Hardwood Habitats

A stand of interior live oak woodland is south of the project site. East and south of the ACID main canal, across from the project site, is a mixed stand of native oaks and non-native tree species. Large, scattered valley oaks occur within and outside the project area. No large stick nests were observed in the canopies; however, small and medium-sized stick nests were present.



LEGEND

PRODUCTION WELL

5-MILE BUFFER

CALIFORNIA NATURAL DIVERSITY DATABASE

Ahart's paronychia
 California linderiella
 Great Valley Cottonwood Riparian Forest
 Great Valley Mixed Riparian Forest
 Great Valley Valley Oak Riparian Forest
 Great Valley Willow Scrub
 Henderson's bent grass
 Red Bluff dwarf rush
 Yuma myotis
 bald eagle
 bank swallow
 brown fox sedge
 chinook salmon - Central Valley spring-run ESU

chinook salmon - Sacramento River winter-run ESU
 hoary bat
 legenera
 osprey
 pink creamsacs
 pointed broom sedge
 silky cryptantha
 silver-haired bat
 slender Orcutt grass
 tricolored blackbird
 valley elderberry longhorn beetle
 vernal pool fairy shrimp
 vernal pool tadpole shrimp
 western pond turtle
 western red bat
 woolly meadowfoam

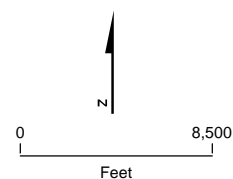
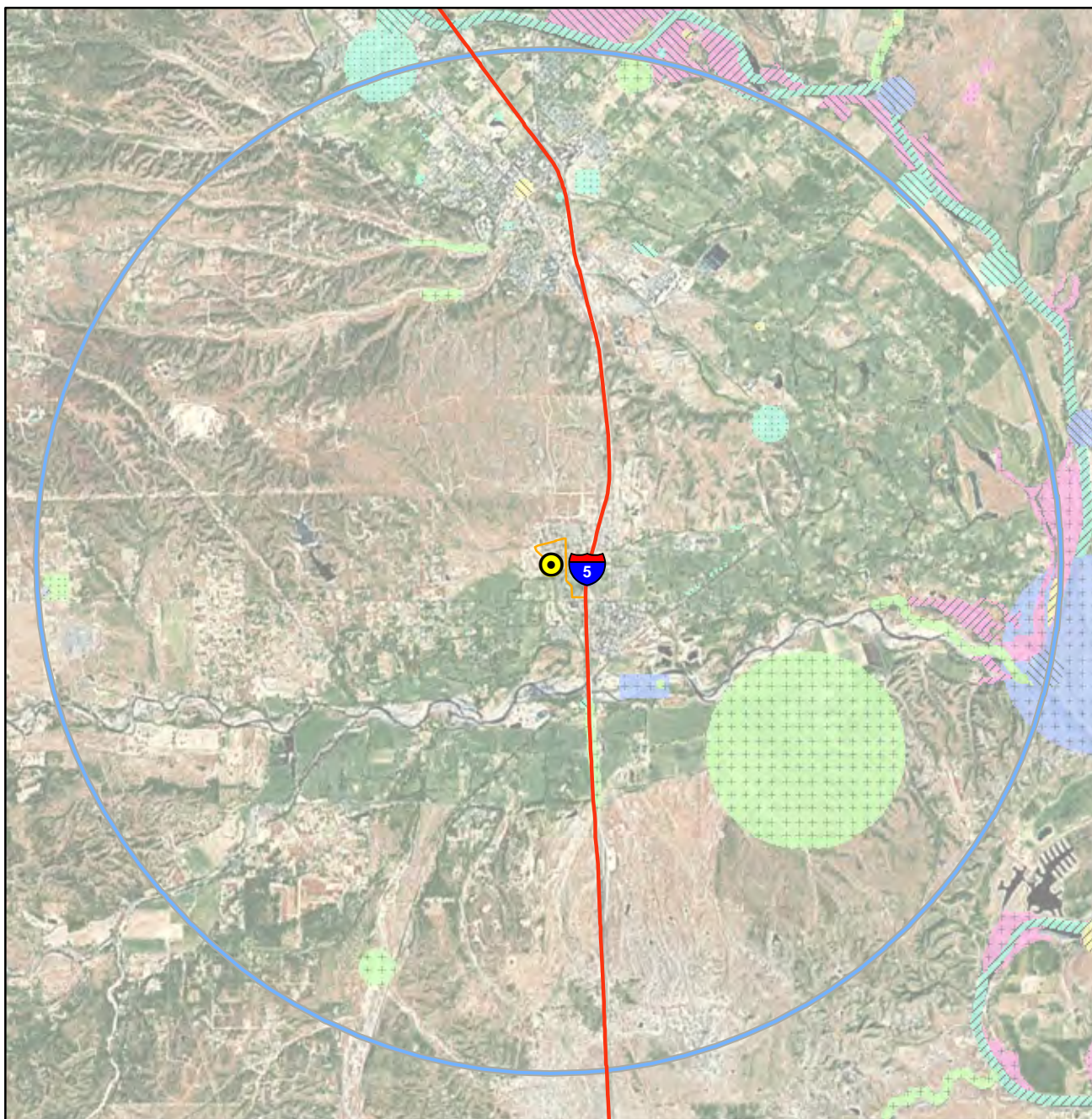


FIGURE 4
ACID WELL No. 1
BIOLOGICAL RESOURCES
 ACID GROUNDWATER PRODUCTION
 ELEMENT PROJECT

CH2MHILL



LEGEND

PRODUCTION WELL

ACCESS ROAD

5-MILE BUFFER

CALIFORNIA NATURAL DIVERSITY DATABASE

Ahart's paronychia

Great Valley Cottonwood Riparian Forest

Great Valley Mixed Riparian Forest

Great Valley Valley Oak Riparian Forest

Red Bluff dwarf rush

Yuma myotis

bald eagle

bank swallow

brown fox sedge

chinook salmon - Sacramento River winter-run ESU

hoary bat

osprey

pink creamsacs

pointed broom sedge

silky cryptantha

silver-haired bat

tricolored blackbird

valley elderberry longhorn beetle

western pond turtle

western red bat

western spadefoot

woolly meadowfoam

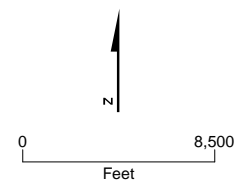


FIGURE 5
ACID WELL No. 2
BIOLOGICAL RESOURCES
 ACID GROUNDWATER PRODUCTION
 ELEMENT PROJECT

Fauna

Fauna species observed were limited for both well sites, possibly due to weather conditions during the survey. Common species for this area consist of raccoon (*Procyon lotor*), grey fox (*Urocyon cinereoargenteus*), western scrub jay (*Aphelocoma californica*), red-tailed hawk (*Buteo jamaicensis*), coyote (*Canis latrans*), and yellow-rumped warbler (*Dendroica coronata*). Attachment B3 (Table B3-2) lists the wildlife species observed within the project area.

Special-status Species

Rare Plants

Rare plants that have the potential to occur within the project area were identified using the CNDDDB and CNPS database and are listed in Attachment B2. Nine plant and one moss species were identified on the Cottonwood, Hooker, Balls Ferry, and Bend quadrangles. Five of the plant species are vernal pool endemics. As neither well site has vernal pools, these five species are not likely to occur. Additionally, no suitable habitat for the moss species occurs within the project area.

Although not observed during the site visit, the following four plant species have the potential to occur within Crowley Gulch or within the ACID main canal at both well sites: Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*), a CNPS 1b species; brown fox sedge (*Carex vulpinoidea*), a CNPS 2 species; pointed broom sedge (*Carex scoparia*), a CNPS 2 species; and pink creamsacs (*Castilleja rubicundula* ssp. *Rubicundula*), a CNPS 1b species. CNPS status codes are defined in Attachment B2 (Table B2-1). Red Bluff dwarf rush occurs in vernal pools, seeps, and meadows. Brown fox sedge occurs in freshwater marshes, swamps, and riparian woodlands. Pointed broom sedge occurs in meadows, stream banks, fens, and woodland edges. Pink creamsacs occur in valley grasslands, cismontane woodlands, and seasonally wet soils in meadows, seeps, and grassland habitats.

Fishery Resources

No fishery resources are associated with Well No. 1.

Crowley Gulch, near Well No. 2, flows to Cottonwood Creek, which contains anadromous fish species. However, special-status fish species are not expected within the project area and would not be affected by the project.

Raptors and Migratory Birds

Both well sites were inspected for raptors and migratory birds and suitable nesting habitat. During the field visit, several raptor and migratory bird species were observed; however, because the surveys occurred before the breeding season, no active nests were observed. Several historical nest sites were observed within the woodland and riparian canopy near Well No. 2. Both well sites have the potential to support ground- and tree-nesting birds, such as killdeer (*Charadrius vociferus*) and red-tailed hawk during the breeding season. The majority of bird species are protected under the Migratory Bird Treaty Act (MTBA).

Roosting Bats

Near Well No. 2, an old wooden barn and old-growth cottonwoods could provide roosting sites for two special-status bat species identified in the CNDDDB search. The western red bat

(*Lasiurus blossevillii*), a California species of special concern, roosts in broad-leafed woodlands in riparian areas. The pallid bat (*Antrozous pallidus*), also a California species of special concern, roosts in buildings and caves. The western red bat could roost in the cottonwood riparian trees on the eastern edge of the site. The pallid bat could roost in the wooden barn within the project area. Under the proposed project configuration, Well No. 2 and the water conveyance line to the ACID canal would not affect the barn and cottonwood trees onsite. Therefore, the project is not expected to affect roosting bat species.

Avoidance and Minimization of Biological Impacts

To the extent possible, new facilities and construction support areas (e.g., new temporary access roads, new staging areas, and new stockpile areas) would be located outside the outer edge or drip line of sensitive habitats listed in Table B1.

TABLE B-1
Avoidance Distances by Habitat Type
ACID Groundwater Production Element Project

Habitat	Buffer Distance
Riparian Forest and Scrub	100 feet from drip line
Oak Woodlands	100 feet from drip line

These habitat avoidance measures minimize impacts to special-status species; however, these species may use non-native habitats, require larger habitat buffers, or require seasonal restrictions. Therefore, to further minimize impacts, the potential for suitable habitat for listed or proposed species to occur at the project sites was assessed. If native habitats (i.e., vernal pools, wetlands, riparian vegetation, native grasslands, oak woodlands) were found at the project sites, new facilities and construction activities would be relocated outside a species-specific buffer area around potential habitat, to the extent possible. No listed or proposed species have been identified for the two well locations; therefore no further action or avoidance restrictions are warranted.

Conclusion and Recommendations

Avoidance and minimization measures would reduce the overall project footprint to a level that would not result in take of special-status species. The overall project footprint would not affect potential waters of the United States or waters of the State of California. Formal consultation is neither warranted nor required for the project, and the avoidance and minimization measures described herein would adequately protect special-status species that could be affected by the project.

The following measures are recommended to avoid impacts to known listed species potentially occurring within the project area:

- If construction occurs during the nesting season, preconstruction nesting surveys should be conducted within 14 days prior to construction. If construction occurs during the non-breeding season for nesting birds (September 1 through February 14), preconstruction surveys are not required.

- If the proposed project configuration changes, preconstruction bat surveys might be required. Construction activities should be restricted to buffer zones at least 100 feet from active bat roosts during the breeding season (March 1 through September 30). If construction occurs during the non-breeding season (October 1 and February 28), preconstruction surveys for bats are not required.

References

California Department of Fish and Game. California Natural Diversity Database (CNDDDB). 2011. Accessed March 2011. Available at: <https://nrmsecure.dfg.ca.gov/myaccount/login.aspx?ReturnUrl=/cnddb/view/updates.aspx>.

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Jepson Interchange. 2008. Jepson Flora Project Online Interchange for California Floristics. University of California, Berkeley. Available at: <http://ucjeps.berkeley.edu/interchange.html>.

Reed, P. B. 1988. National List of Plant Species that Occur in Wetlands; California (Region 0). U.S. Fish and Wildlife Service. Available at: <http://www.fws.gov/nwi/Plants/list88.html>.

U.S. Fish and Wildlife Service Sacramento Office. Endangered Species Branch. 2011. Accessed February 2011. Available at: http://fws.gov/sacramento/es/spp_list/auto_list.cfm.

Attachment B1
Site Photographs



PHOTOGRAPH 1
ACID Well No. 1, View South



PHOTOGRAPH 2
ACID Well No. 1, View East



PHOTOGRAPH 3
ACID Canal West of Study Area, Well No. 1, View South



PHOTOGRAPH 4
ACID Well No. 1 Southern End of Study Area, View South



PHOTOGRAPH 5
ACID Approximate Location for Well No. 1 in Northeast End of Study Area, View North



PHOTOGRAPH 6
Crowley Gulch East of Study Area Well No. 2, View North



PHOTOGRAPH 7
Crowley Gulch Downstream of Well No. 2 Study Area, View South



PHOTOGRAPH 8
ACID Canal East of Well No. 2, Power Pole Approximate Location of New Well, View West



PHOTOGRAPH 9
ACID Canal at Edge of Well No. 2, View South



PHOTOGRAPH 10
View along Access Route to Well No. 2, North of Study Area, View South

Attachment B2
CNDDB, CNPS, and USFWS Species Lists

TABLE B2-1
Special-status Plant and Animal Species Reported Near the ACID Well No. 1 and 2 Project Area
ACID Groundwater Production Element Project

Scientific Name	Common Name	Federal/ State/CNPS Status	Habitat Requirements	Breeding/Nesting– Bloom Season	Potential for Species within Project Area
Birds					
<i>Agelaius tricolor</i>	Tricolored black bird	--/CSC/--	Breeds near fresh water, preferably in emergent wetlands, with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbs. Feeds in grassland and cropland habitats.	February to May	Highly unlikely – no suitable nesting habitat is in the project vicinity; suitable foraging habitat is present.
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo (nesting)	FC/SE/--	Riparian woodlands composed of dense cottonwoods and willows.	June to September	Highly unlikely – no suitable nesting habitat or foraging habitat is in the project vicinity.
<i>Haliaeetus leucocephalus</i>	Bald eagle (nesting and wintering)	FD/SE/--	Requires large bodies of water or free-flowing rivers with abundant fish and adjacent snags or other perches. Nests in large, old-growth, or dominant live tree with open branchwork, especially ponderosa pine.	January to March	Highly unlikely – no suitable nesting habitat or foraging habitat is in the project vicinity.
<i>Pandion haliaetus</i>	Osprey (nesting)	--/--/--	Forages along ocean shore, bays, freshwater lakes, and large streams. Nests built in tops of large trees within 15 miles of good fish-producing bodies of water.	March to September	Highly unlikely – no suitable nesting habitat or foraging habitat is in the project vicinity.
<i>Riparia riparia</i>	Bank Swallow	--/ST/--			
Mammals					
<i>Antrozous pallidus</i>	Pallid bat	--/CSC/--	Grasslands, shrublands, woodlands, and forests from sea level up through mixed conifers. Rocky areas with caves or tunnels. Occasionally inhabit old buildings.	October to February	Moderate – habitat present, building would not be disturbed.
<i>Lasionycteris noctivagans</i>	Silver-haired bat	--/--/--	Lives in forested areas; roosts under bark and in tree hollows. Solitary bat, slow flyer. Usually migrates south for winter, or hibernates in trees, crevices, buildings, mines, or other sheltered location.	Gives birth in the early summer	Low – no apparent cavities or snags in or near the project area. No riparian trees would be removed.

TABLE B2-1
Special-status Plant and Animal Species Reported Near the ACID Well No. 1 and 2 Project Area
ACID Groundwater Production Element Project

Scientific Name	Common Name	Federal/ State/CNPS Status	Habitat Requirements	Breeding/Nesting– Bloom Season	Potential for Species within Project Area
<i>Lasiurus blossevillii</i>	Western red bat	--/CSC/--	Broad-leafed woodlands, usually in riparian areas. Roosts in tree foliage. Primarily found at mid-elevations.	March to June	Moderate – habitat present, no riparian trees would be removed.
<i>Lasiurus cinereus</i>	Hoary bat	--/--/--	Generally roosts in dense foliage of medium to large trees. Prefers open habitats or habitat mosaics with access to trees for cover and open areas or habitat edges for foraging.	Mid-May through early July	Moderate – habitat present, no trees would be removed.
<i>Myotis evotis</i>	Long-eared myotis	--/--/--	Lives in coniferous forest in mountain areas. Roosts in small colonies in caves, buildings, and under tree bark.	Unknown; young are born June to July	Low – generally occur at higher elevations.
<i>Myotis yumanensis</i>	Yuma myotis	--/--/--	Day roosts are found in cavities in buildings, trees, mines, caves, bridges, and rock crevices. Night roosts are usually associated with buildings, bridges, and other open manmade structures.	May to September	Low – no apparent cavities or snags in or near the project area. No riparian trees would be removed.
Reptiles					
<i>Emys (=Clemmys) marmorata</i>	Northwestern pond turtle	--/CSC/--	Requires some slack- or slow-water aquatic habitat. Often reaches higher densities where many aerial and aquatic basking sites are available. Hatchlings require shallow-water habitat with relatively dense submergent or short emergent vegetation in which to forage. Also requires an upland oviposition site (high clay or silt fraction soil, on an unshaded slope) near the aquatic site.	April to May	Highly unlikely – no suitable habitat in the project area.

TABLE B2-1
Special-status Plant and Animal Species Reported Near the ACID Well No. 1 and 2 Project Area
ACID Groundwater Production Element Project

Scientific Name	Common Name	Federal/ State/CNPS Status	Habitat Requirements	Breeding/Nesting– Bloom Season	Potential for Species within Project Area
Amphibians					
<i>Rana draytonii</i>	California red- legged frog	FT/CSC/--	Found in humid forests, woodlands, grasslands, and streamsides with plant cover. Most common in lowlands or foothills. Frequently found in woods adjacent to streams. Breeding habitat is in permanent water sources; lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. Typically without predatory fish, requires adequate hibernacula such as small mammal burrows and moist leaf litter. From sea level to 8,000 feet.	November to April; eggs hatch within 4 weeks and tadpoles metamorphose within 4 to 7 months	Low – no temporary pools and stream flows for breeding.
<i>Spea (=Scaphiopus) hammondi</i>	Western spadefoot (toad)	--/CSC/--	Occurs primarily in grasslands, but occasional populations occur in valley foothill hardwood woodlands. Requires temporary rainpools with water temperatures between 9°C and 30°C that last 3 weeks, and that lack fish, bullfrogs, and crayfish. Soil characteristics of burrow refuge sites have not been studied, but if they are similar to those of <i>S. multiplicatus</i> , soil could become fairly compact and hard during summer aestivation.	January to May; metamorphose within 3 to 11 weeks	Low – no temporary pools for breeding.
Invertebrates					
<i>Branchinecta conservatio</i>	Conservancy fairy shrimp	FE/--/--	Occurs in large, generally playa-like vernal pools with highly turbid water.	October to May	Highly unlikely – no suitable habitat in the project area.
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	FT/--/--	Found in vernal pools (seasonal wetlands).	October to May	Highly unlikely – no suitable habitat in the project area.
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	FT/--/--	Host plant elderberry (<i>Sambucus jexicana</i>). Generally found in riparian stands of clustered host plant.	April to June	Highly unlikely – no suitable host plant in the project area.

TABLE B2-1
Special-status Plant and Animal Species Reported Near the ACID Well No. 1 and 2 Project Area
ACID Groundwater Production Element Project

Scientific Name	Common Name	Federal/ State/CNPS Status	Habitat Requirements	Breeding/Nesting– Bloom Season	Potential for Species within Project Area
<i>Fluminicola seminalis</i>	Nugget pebblesnail	--/--/--	Found in the Pit and McCloud rivers, California. Formerly known from the mainstem Sacramento River, from its mouth upstream to Pit River, including large spring-fed tributaries. Found in river reaches and springs that have cold, well-oxygenated, clear water, generally with cobble or boulder substrates.	Spring (further research required)	Highly unlikely – no suitable habitat in the project area.
<i>Lanx patelloides</i>	Kneecap lanx	--/--/--	Freshwater streams and rivers.	Unknown	Highly unlikely.
<i>Legenere limosa</i>	Legenere	--/--/-- CNPS 1B	Occurs in vernal pools. Many historical occurrences are extirpated.	May to June	Highly unlikely – no suitable habitat in the project area.
<i>Lepidurus packardii</i>	Vernal pool tadpole shrimp	FE/--/--	Inhabits vernal pools and swales in the Sacramento Valley and San Joaquin Valley containing clear to highly turbid water. Commonly found in grass-bottomed swales of unplowed grasslands. Some inhabit mud-bottomed and highly turbid pools.	October to May	Highly unlikely – no suitable habitat in the project area.
<i>Linderiella occidentalis</i>	California linderiella	--/--/--	Inhabits clear to tea-colored water in seasonal ponds, which range from square feet to many acres, and are typically in grasslands or in depressions of sedimentary rock.	October to May	Highly unlikely – no suitable habitat in the project area.
Fish					
<i>Acipenser medirostris</i>	Green sturgeon	FT ^a /CSC ^b /--	Sturgeon use both freshwater and saltwater habitat. Green sturgeons spawn in deep pools or “holes” in large, turbulent, freshwater river mainstems. Specific spawning habitat preferences are unclear, but eggs likely are broadcast over large cobble substrates, but range from clean sand to bedrock substrates.	Adults typically migrate into fresh water beginning in late February; spawning occurs from March to July, with peak activity from April to June	Highly unlikely – no suitable habitat in the project area.

TABLE B2-1
Special-status Plant and Animal Species Reported Near the ACID Well No. 1 and 2 Project Area
ACID Groundwater Production Element Project

Scientific Name	Common Name	Federal/ State/CNPS Status	Habitat Requirements	Breeding/Nesting– Bloom Season	Potential for Species within Project Area
<i>Hypomesus transpacificus</i>	Delta smelt	FT/--/--	Adults live in oceanic waters, bays, and estuaries when not spawning. Green sturgeons are known to forage in estuaries and bays ranging from San Francisco Bay to British Columbia. Found only in the Sacramento-San Joaquin Estuary. Resides primarily in the interface between salt water and fresh water. Decline in population caused by reductions in Delta water outflow.	May	Not within home range of this species.
<i>Oncorhynchus mykiss</i>	Central Valley steelhead	FT/--/--	Found in tributaries to the San Francisco Bay, including the South Bay. Pass through the San Francisco Estuary during migration to streams for spawning, and during outmigration to the ocean. Spawns in small streams and tributaries with cold, clean water flowing over graveled bottoms and deep pools.	Migrates July to May; spawns December to April	Low – salmonids have been observed in Crowley Gulch when canal water has been inadvertently directed downstream from the ACID canal weir. No sustained breeding habitat present.
<i>Oncorhynchus tshawytscha</i>	Winter-run Chinook salmon	FE/SE/--	Sacramento River and tributaries. Spawning takes place in swift, moderately shallow riffles or in areas along fast-moving banks with plentiful gravelly substrate. The gravel needs to be clean, loose, and stable for the duration of the larval stage.	Migrates December through early August; spawns in the upper mainstem Sacramento River from mid-April through August	Low – salmonids have been observed in Crowley Gulch when canal water has been inadvertently directed downstream from the ACID canal weir. No sustained breeding habitat present.
<i>Oncorhynchus tshawytscha</i>	Central Valley spring-run Chinook salmon	FT/--/--	Found in tributaries to the San Francisco Bay including the Sacramento River watersheds. Passes through the San Francisco Estuary during migration to streams for spawning, and during outmigration to the ocean. Spawns in well-oxygenated water in swift, shallow riffles, or at edges of fast runs with loose gravel.	Migrates during spring; holds in headwaters areas, and spawns during late summer and early fall	Low – salmonids have been observed in Crowley Gulch when canal water has been inadvertently directed downstream from the ACID canal weir. No sustained breeding habitat present.

TABLE B2-1
Special-status Plant and Animal Species Reported Near the ACID Well No. 1 and 2 Project Area
ACID Groundwater Production Element Project

Scientific Name	Common Name	Federal/ State/CNPS Status	Habitat Requirements	Breeding/Nesting– Bloom Season	Potential for Species within Project Area
Plants					
<i>Anomobryum julaceum</i>	Slender silver moss	--/--/CNPS 2.2	Moss found in broad-leafed upland forest and lower montane coniferous forest on damp rock soil on outcrops and along road cuts.	None	Highly unlikely – no suitable habitat in the project area.
<i>Carex scoparia</i>	Pointed broom sedge	--/--/CNPS 2.2	Meadows, stream banks, ferns, and woodland edges.	May to August	Moderate – this species was not observed during survey. Potential to occur in Crowley Gulch.
<i>Carex vulpinoidea</i>	Brown fox sedge	--/--/CNPS 2.2	Occurs almost always under natural conditions in wetlands, riparian, and freshwater marsh.	May to June	Moderate – this species was not observed during survey. Potential to occur in Crowley Gulch.
<i>Castilleja rubicundula</i> ssp. <i>rubicundula</i>	Pink creamsacs	--/--/CNPS 1B.2	Occurs in openings of chaparral, cismontane woodland, meadows, seeps, and valley grasslands.	April to June	Moderate – this species was not observed during survey. Seasonally moist habitats.
<i>Cryptantha crinita</i>	Silk cryptantha	--/--/CNPS 1B.2	Cismontane woodland, valley and foothill grasslands, lower montane coniferous forest, riparian forest, and riparian woodland; often in gravelly streambeds.	April to May	Low – habitat along Crowley Gulch is not the typical habitat community in which this species is found.
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	--/--/CNPS 1B.2	Vernal pools, lake or reservoir margins in shallow water or moist ground on adobe soil. In grasslands, oak woodlands, sagebrush-juniper to pine forest type. Found at elevations from 650 to 5,600 feet.	April to August	Highly unlikely – no suitable habitat in the project area.
<i>Juncus leiospermus</i> var. <i>leiospermus</i>	Red Bluff dwarf rush	--/--/CNPS 1B.1	Vernal pools and swales, seeps, and other seasonally moist sites in chaparral, cismontane woodland, and valley and foothill grasslands.	March to May	Low – this species was not observed during wetland survey. Low potential to occur in Crowley Gulch.
<i>Legenere limosa</i>	Legenere	--/--/CNPS 1B.1	Vernal pools.	April to June	Highly unlikely – no suitable habitat in the project area.
<i>Orcuttia tenuis</i>	Slender orcutt grass	--/--/CNPS 1B.1	Vernal pools.	May to September	Highly unlikely – no suitable habitat in the project area.

TABLE B2-1
Special-status Plant and Animal Species Reported Near the ACID Well No. 1 and 2 Project Area
ACID Groundwater Production Element Project

Scientific Name	Common Name	Federal/ State/CNPS Status	Habitat Requirements	Breeding/Nesting– Bloom Season	Potential for Species within Project Area
<i>Paronychia ahartii</i>	Ahart's paronychia	--/--/CNPS 1B.1	Vernal pools, shallow or poorly drained soil in Cismontane woodland, and valley and foothill grasslands.	March to June	Highly unlikely – no suitable habitat in the project area.

^aFederal listing includes all spawning populations south of the Eel River

^bNational Marine Fisheries Service “special concern” refers to all spawning populations north of the Eel River

Sources:

California Department of Fish and Game CNDDDB, 2011.

CNPS, 2011.

USFWS, 2011.

Notes:

--/--/-- = No federal, state, or CNPS status

Federal:

FC = Federal Candidate for Listing as Threatened or Endangered

FD = Federally Delisted Species

FE = Federal Endangered

FT = Federal Threatened

State:

CSC = California Species of Concern

SE = State Endangered

ST = State Threatened

CNPS:

CNPS 1A = Species is Presumed Extinct in California

CNPS 1B = Plants Rare, Threatened, or Endangered in California and Elsewhere

CNPS 2 = Plants Rare, Threatened, or Endangered in California but More Common Elsewhere

CNPS Threat Ranks:

.1-Seriously threatened in California (high degree/immediacy of threat)

.2-Fairly threatened in California (moderate degree/immediacy of threat)

.3-Not very threatened in California (low degree/immediacy of threats or no current threats known)

Attachment B3
Flora and Fauna Species Observation Lists

TABLE B3-1
Plant Species Observed at the Project Site
ACID Groundwater Production Element Project

Scientific Name	Common Name	Growth Habitat	Indicator Status ^a
Asteraceae			
<i>Centaurea solstitialis</i>	Yellow star-thistle	Herb	NL
<i>Lactuca serriola</i>	Prickly lettuce	Herb	FAC
<i>Silybum marianum</i>	Milk thistle	Herb	NL
Brassicaceae			
<i>Brassica nigra</i>	Black mustard	Herb	NL
<i>Raphanus sativus</i>	Radish	Herb	NL
Cyperaceae			
<i>Cyperus esculentus</i>	Yellow nutgrass	Herb	FACW
Fabaceae			
<i>Acacia</i> sp.	Acacia	Tree	NL
Fagaceae			
<i>Quercus wislizenii</i>	Interior live oak	Tree	NL
<i>Quercus lobata</i>	Valley oak	Tree	FACU
Geraniaceae			
<i>Erodium botrys</i>	Broadleaf filaree	Herb	NL
Juncaceae			
<i>Juncus balticus</i>	Baltic rush	Herb	OBL
Oleaceae			
<i>Ligustrum</i> sp.	Privet	Shrub	NL
Pinaceae			
<i>Pinus radiata</i>	Monterey pine	Tree	NL
Poaceae			
<i>Avena fatua</i>	Wild oat	Herb	NL
<i>Bromus diandrus</i>	Ripgut brome	Herb	NL
<i>Bromus hordeaceus</i>	Soft chess	Herb	UPL
<i>Paspalum dilatatum</i>	Dallisgrass	Herb	NL
<i>Vulpia myuros</i>	Rat-tail fescue	Herb	NL
Polygonaceae			
<i>Rumex crispus</i>	Curly dock	Herb	FACW
Rosaceae			
<i>Rubus discolor</i>	Himalayan blackberry	Shrub	FACW ^b

TABLE B3-1
Plant Species Observed at the Project Site
ACID Groundwater Production Element Project

Scientific Name	Common Name	Growth Habitat	Indicator Status ^a
Salicaceae			
<i>Populus fremontii</i>	Fremont cottonwood	Tree	FACW
<i>Salix goodingii</i>	Gooding's willow	Tree	OBL
<i>Salix lasiolepis</i>	Arroyo willow	Tree	FACW
Typhaceae			
<i>Typha latifolia</i>	Broad-leaved cattail	Herb	OBL

^aIndicator Status from the National List of Plant Species that Occur in Wetlands; California (Region 0) (Reed, 1988).

^bIndicates a tentative status code assignment.

Source: USFWS, 2011.

Notes:

+/- = Indicates greater (+) or lesser (-) tendency to occur in wetlands.

FAC = Facultative Status Species; Estimated probability of 33 to 67 percent chance of occurring in wetlands. Species not considered to be typically adapted for life in anaerobic soil conditions.

FACU = Facultative Upland Status; Estimated probability of 1 to 33 percent chance of occurring in wetlands.

FACW = Facultative Wetland Status; Estimated probability of 67 to 99 percent chance of occurring in wetlands.

NL = Not included on the 1988 list.

OBL = Obligate Species; Estimated probability of 99 percent chance of occurring in wetlands.

UPL = Obligate Upland; Estimated probability of less than 1 percent chance of occurring in wetlands.

TABLE B3-2
Wildlife Species Observed at the Project Site
ACID Groundwater Production Element Project

Scientific Name	Common Name	Observation Type
Birds		
<i>Carpodacus mexicanus</i>	House finch	Visual
<i>Dendroica coronata</i>	Yellow-rumped warbler	Visual
<i>Sturnus vulgaris</i>	European starling	Visual
<i>Pica nuttalli</i>	Yellow-billed magpie	Visual
<i>Corvus brachyrhynchos</i>	American crow	Visual
<i>Sayornis nigricans</i>	Black phoebe	Visual
<i>Buteo jamaicensis</i>	Red-tailed hawk	Visual
Mammals		
<i>Procyon lotor</i>	Raccoon	Tracks